EHR Project Evaluation Review

Draft Report

Submitted to:

The National Science Foundation
4201 Wilson Boulevard
Arlington, Virginia 22230

Prepared by:

Westat
1650 Research Boulevard
Rockville, Maryland 20850

May, 2002

A. Background

As part of the Evaluation Training Activities task order contract with the National Science Foundation (NSF), Division of Research, Evaluation and Communication (REC), Westat conducted a study of Education and Human Resources (EHR) staff and principal investigators (PIs). Westat interviewed staff from 45 EHR-funded projects and NSF staff from four main program areas to assess the impact of project evaluation requirements and determine what other resources might be provided to improve project evaluations. This memorandum summarizes our findings from conversations with EHR program officers (POs) (Section A) and principal investigators (Section B) from four divisions: Undergraduate Education (DUE), Human Resources Development (HRD), Elementary, Secondary, and Informal Education (ESIE), and Graduate Education (DGE). Results will help guide Westat's efforts to design an evaluation web site for NSF and inform additional activities that may be undertaken through this task order or other means (Section C).

Our main objective was to (1) identify areas in which POs and PIs had experienced any difficulties concerning the evaluation of their projects, (2) determine which areas of project evaluation were working well, and (3) solicit recommendations for improvements to the evaluation component within EHR, including suggestions for a web site. We probed with questions on satisfaction with the help and guidance available to projects, evaluation requirements, and issues surrounding evaluators. Together, NSF and Westat developed protocols to guide the PO and PI conversations (Appendices A and B). The PI protocol was designed with three versions, which geared questions toward new grantees who had not yet begun their evaluation, grantees who were in the midst of conducting evaluation, and grantees who had already completed a project evaluation.

We first spoke with groups of division directors and program officers from EHR in person. We then selected a sample of project staff primarily comprising principal investigators. We contacted the project staff by telephone to conduct brief conversations.

B. Conversations with EHR Program Officers

Westat met with nine groups that included 27 EHR program officers from DUE, ESIE, HRD, and DGE in July and August 2001. We talked about POs' evaluation activities, perceptions of changes that have been implemented, and suggestions for improving current activities. We focused on what is needed to better prepare those practicing evaluation for their task and how to increase the supply of qualified evaluators.

Evaluation. As a whole, NSF POs have noticed an increase in evaluation requirements in recent years. Although there is still a wide range of activities, every program mandates at least some type of evaluation. Some program announcements outline very specific evaluation requirements that must be met, while others simply suggest that an evaluation should be performed.

Some POs were pleased with the impact that increased evaluation requirements have had on their projects. For example, HRD officers noticed how the increased competition for internal resources within their division has improved the quality of project evaluation. They feel that evaluation has become more of a tool to shape further project activities than a burden on PIs.

While the response to increased evaluation efforts is generally positive, all groups of POs with whom we spoke identified some areas in need of improvement. Some of the challenges in evaluation concern lack of adequate funding, lack of knowledge of sophisticated evaluation techniques, and somewhat ambiguous requirements. Some group-specific comments are highlighted below.

- In the groups of DUE POs, there was a common theme of dissatisfaction with the level of evaluation that is routinely taking place. One possible reason was the lack of funding available for evaluation. Suggestions included providing funding for periods longer than just the life of the project and designating more funds to be dedicated solely to evaluation activities.

- Although POs in Advanced Technological Education (ATE) were generally pleased with the evaluation activities that are performed, they feel that the greater use of qualitative methods could more accurately capture the essence of the program.

- DGE POs face unique challenges since they are often funding individual graduate students during only part of their education. Evaluating the success of the projects only while they are active omits pertinent data elements, since the full impact of a project may not always be captured during the funding period. They would like to see data collection extended in order to follow students for years after their funding has expired.

- Some ESIE staff felt that although people are collecting valuable information, there is already a wealth of information available about what has and has not worked in projects

that is not being mined effectively. There was some frustration at the lack of organization, which disrupts the feedback loop. They felt that although projects often gain valuable information from evaluation, there is no standardized process to share the information at a program level and subsequently to extend the theory base of applied research in the field.

Overall, POs have seen an increased appreciation for the utility of effective evaluation. They felt that with guidance, PIs could use the already improved evaluation requirements to produce more useful information for continued enhancement of project quality.

Evaluators. POs appreciate and acknowledge the high-quality evaluators who have been used repeatedly on their projects. However, many feel that their PIs are dependent on the same people because of the scarcity of available qualified evaluators. Capacity was the most persistent theme dominating conversations regarding evaluators. PIs often do not even know where to look to find good evaluators.

There is an enduring debate about whether it is more beneficial to use people with extensive evaluation knowledge and less content background or to use people with solid content background and less experience with evaluation. Of course, everyone would prefer to find people with expertise in both areas. Given the capacity issue, some POs have recommended using a mix of people to make up an evaluation team. Funding is again an issue, as many smaller projects can't afford to hire *anyone* to perform evaluation activities.

A related argument exists about the advantages of using internal versus external evaluators. Some POs see using internal evaluators as an indicator that PIs are more concerned with improving their projects and contributing to knowledge building in the field. Internal evaluators may have more expertise in the field and could potentially have a better understanding of the benefits that evaluation can have for a particular project, but they also may be viewed as biased. Some outside evaluators face the same criticism, especially if they have been awarded contracts before. There are suspicions about contractors being paid to gloss over problems in order produce results that the project director wants to see. However, an external evaluator can provide a broader view, including valuable insight not supplied by internal evaluation.

Proposals. For the most part, POs have seen an increase in the quality of evaluation plans presented in proposals, perhaps because some PIs seek outside evaluators to help with writing that section. Many different groups of POs said that they responded to proposals with questions or

suggestions for evaluation, and that they often would award the grants once the suggestions had been implemented. One problem with this approach is that the perspective PIs may submit a superficial proposal plan knowing that the POs will identify weak areas and/or devise evaluation plans for them.

Some programs delineate precisely what they require in terms of evaluation, so there is not much room for negotiation. In other programs, such as the Graduate Fellowship Program, no evaluation section is required since they are generally funding individual students. There is a vast range in the quality of proposals being submitted and evaluators being proposed. Some groups of POs advocated implementing greater standardization for project evaluation. They thought that providing more direction could only serve to improve existing proposals.

Panels. No programs specifically require that evaluators be part of their panels. By the nature of the selection of panel members, people with evaluation experience generally make up a portion of most panels. And programs that already have many requirements for who must be included on the panels don't have room for members needed to fulfill any more criteria. ESIE, for example, requires that the group be representative by race, gender, and disabilities, and also tries to achieve a mix of educators and researchers from mathematics and science disciplines. ESIE POs therefore feel it would become laborious to select panels if they were to incorporate any additional categories.

One problem with using people that have some evaluation experience, such as PIs, but are not evaluators is that they can recognize when part of a proposal is weak, but they may not know how to make the proposal technically sound. Although they may not be sophisticated in their knowledge of evaluation, POs are satisfied that the panel participants are still capable of making quality judgments. They think it is unlikely that any programs would include someone solely based on his/her evaluation expertise because the project requirements are too technical for an evaluator who is not already involved in the discipline.

GPRA. The Government Performance and Results Act of 1993 (GPRA) was passed in order to increase program performance by requiring strategic thinking as well as the annual setting and measurement of goals. Overall, POs did not report much trouble in attaining the information that was necessary to respond to GPRA requirements. Some issues of concern were that the requirements change annually, and they are not distributed far enough in advance for programs to collect data in the form required. Respondents suggested that requirements be established earlier in the fiscal year and that they not be changed from year to year. An overwhelming majority of POs did not seem concerned with GPRA reporting and or find it to be too demanding. Although they varied in their view of whether GPRA

requirements produce helpful versus superficial information, many POs also did not seem confident that they really knew what GPRA required.

Support. Among projects there is a wide range of support services employed, depending on the size and type of grant and its directorate. However, the majority of POs admit that most PIs could benefit from an increase in support. They could profit from additional resources such as web pages directing to evaluation help, additional evaluation workshops and seminars, and evaluation handbooks that are more tailored to project type and size. Project level staff are currently using available resources, and POs think that they would use more if they were available.

Annual reports. FastLane offers a convenient way for projects to submit general project summary data, such as annual reports, in an electronic reporting form. However, many program staff believe that there is very valuable information that is not reported through FastLane. Most program officers agree that the system is not designed to capture specific evaluation results, and some programs require separate reports that are more conducive for evaluation reporting. A common complaint was that there is no standard expectation even within programs for the separate evaluation reports. POs received greatly disparate amounts of data in reports, which come from projects ranging from those that offer only select figures in order to appear to be functioning better than they actually are, to those that submit so much superfluous information that it is impossible to extract anything meaningful. It would be beneficial if all projects were required to report thorough and meaningful data in their annual reports.

Recommendations to NSF. Most of the recommendations from POs involve NSF providing better access to resources. Many POs expressed the need for more information to be easily accessible through a web site, including lists of available evaluators, examples of evaluation plans from successful proposals, links to recommended instruments, core evaluation criteria requirements, and evaluation templates. POs feel that there is no reason for new PIs to learn by trial and error when these resources already exist.

Although POs cited the utility of the evaluation handbooks, most found them to be too cumbersome to be useful as a quick reference. They suggested producing a shorter version that hits the highlights. Another recommendation was that an even briefer general paragraph on evaluation could be included in program announcements. POs suggested that NSF take a more active role in promoting information sharing between divisions through activities such as brown bag lunches. Other suggestions included hiring full-time evaluators at the division level, offering more evaluation training, and promoting the importance of conducting honest and self-critical evaluation.

Evaluation training. Many groups of POs expressed an interest in offering evaluation training to PIs or even perspective PIs. Some thought that the annual meeting was a good place to hold these trainings, but others thought that it would be more beneficial to present the topic at special sessions for new awardees. Some continuing PIs would not benefit from an introductory session on evaluation once they have already participated in collecting information for their own evaluation and presumably attended evaluation training at previous annual meetings. Some POs described the benefit of using something like a national visiting committee that could actually come to NSF to make presentations to project evaluators.

Program evaluation. POs from all areas were concerned about overwhelming already burdened PIs with additional data requirements that would be mandatory through a program-level evaluation. Many acknowledged the utility of such information, but believed the data would have to come from a higher level than the projects. They were not opposed to using such information if it was collected quickly and actually utilized to improve programs, but there were concerns about whether data would be selectively used to support a political agenda.

Overall impressions. The overall response of POs concerning evaluation requirements was positive. Most POs from all of the divisions felt that the quality of evaluation has improved in recent years with the increasing emphasis that has been placed on it. They acknowledged areas with need for improvement and offered valuable suggestions. POs as a group felt that there was a lot of room for more guidance concerning evaluation at all levels. They were appreciative of the work that REC has done thus far and hoped to be involved in the expansion of those efforts. They identified key resources, including ideas for a web site, that could enhance current evaluation activities. Program-level staff felt that there are successful examples of evaluation activities in existence that could be used to improve evaluation throughout NSF if we can identify, centralize, and make available the resources, knowledge, and information.

C. Conversations with Principal Investigators

Westat and REC decided to limit discussions on project evaluation to PIs funded by DUE, HRD, ESIE, and DGE. We included only those grants that were awarded in fiscal years 1999, 2000, and 2001. This decision was made because staff would already have begun evaluation activities, but the

project efforts would not have occurred so long ago that the PI was gone or had forgotten key information.

Selection process. We wanted to get a sense of the difference in evaluation activities taking place between the medium-size projects ($100,000-$1 million) versus the larger (>$1 million) projects; we did not look grants with total awards of less than $100,000, since projects with smaller budgets are less likely to have funds allocated for evaluation. We wanted to talk to several grantees within each group to determine if their experiences were similar. Within the sample, we selected grantees from colleges and universities as well as from research institutions and other private organizations. We incorporated suggestions from POs on projects to include.

From our original sample of 73 grants, we excluded 13 based on suggestions of REC and EHR staff. We subsequently rejected another 15 for various reasons, including the institution closing since the end of the grant, the PI no longer working there, and some refusals and nonresponse. We did not resample to replace the ineligibles since we still had adequate representation from large and medium-size grants within each division. In addition, we were hearing the same types of responses repeated, so we did not feel that we would gain additional information from a larger sample of the same group of respondents. (Appendix C describes the original sample selection process.)

Project type. Of the 45 grant in the final sample, ESIE, DUE, and HRD each supported 12 (26.7 percent) and the remaining 9 (20 percent) were funded by DGE. We included both large and small grants from each type of organization and within each program area. In an effort to understand the issues that PIs face in responding to evaluation requirements, we contacted PIs by phone during the period December 2001 to February 2002 to ask a series of open-ended questions that took approximately 20 minutes to complete.

Table 1.—EHR grants, by size and program area

Program area	Large	Medium	Total
Total	27	18	45
ESIE	9	3	12
DUE	6	6	12
HRD	6	6	12
DGE	6	3	9

Extent to which PIs conducted evaluation themselves. More PIs in our sample were using evaluators to conduct their evaluations than were doing the evaluations themselves. PIs of large grants were much more likely to use an evaluator, whereas the majority of PIs of medium-size grants conducted project evaluation themselves. Funding was the major factor driving that decision. Accordingly, some PIs of medium-size grants expressed a desire to have funds separate from the grant award designated for evaluation.

It was common for PIs at universities to use graduate students and other university staff to assist with evaluation, regardless of whether or not they were conducting the evaluation themselves. As a whole, the PIs who used another evaluator generally sought evaluators from outside of their institutions, but there were some different patterns by division. All of the PIs from ESIE who used evaluators sought outsiders. Conversely, in HRD, the majority relied on in-house resources. Of those who used evaluators, the overwhelming majority reported no trouble in locating someone to help with this task. Often, the PI had previously worked with the evaluator or someone had recommended him/her.

Guidance PIs provided their evaluator. Most PIs worked closely with their evaluators or specified at least some of the goals and objectives or methodologies that they should use. Although some evaluators had been involved as early as the writing of the evaluation plan for the proposal, most were brought on after the award. Only a few PIs said that they left the evaluation entirely up to the evaluator's judgment, specifically because the evaluator had more knowledge in the area than the PI or had written the proposal plan in the first place. The finding was not dependent on program area or size of grant. For the most part, PIs felt that their background in evaluation was strong enough to effectively guide their evaluators, either because they had formal graduate training or had years of experience as PIs on other NSF grants.

NSF's evaluation requirements. The clear majority of PIs did not feel that there were any evaluation components uniformly required at the program level, although several thought NSF was working on implementing more standard requirements. For the most part, PIs were content with the latitude that NSF permits them in designing their own evaluations. However, there were also those who would welcome more uniform requirements. One PI said that she thought that more guidelines would be good "because there is huge variation in evaluation in projects." Among PIs who said that NSF has uniform requirements, almost all thought that they were clear in what they were asking.

Usefulness of the evaluations. Most of the PIs have offered very positive feedback regarding the usefulness of the findings from evaluations of their projects. Almost all had shared, or had

plans to share, evaluation findings with others in their university or organization and/or with others in the field. Many had dissemination plans that included posting results on web sites, presenting at conferences, and publishing results in journals. They viewed formal and informal methods of sharing results as vital to the feedback loop in their respective fields within the scientific community. Most PIs also thought that their evaluations had produced valuable information that guided changes to improve their projects' actual practice. Some had plans to implement changes in the future based on findings, but many others had already implemented changes during the life of the grant.

Help with evaluation. Although most PIs did not express any need for additional help with evaluation, many said that they would access any resources that were available. Some PIs of newly awarded grants had not yet needed any help, but wanted to keep the door open in case they encountered problems later on. About a quarter of respondents said that they needed help in evaluation, especially regarding technical assistance, feedback on evaluation, and information sharing. They were concerned that valuable evaluation knowledge and tools are not being shared effectively.

Guidance from NSF/EHR. We asked PIs whether they felt they were receiving sufficient guidance regarding project evaluation. While many thought there was enough, one-fourth of PIs did not think the guidance was adequate. A repeated concern was that guidelines concerning evaluation and finding an appropriate evaluator were insufficient. Some PIs admitted that their concerns could be a product of their inexperience, but felt that NSF could do more to familiarize new PIs with evaluation expectations. Some thought it was too early to tell; others, who cherished their flexibility, thought that NSF already provides too much unsolicited guidance.

Evaluation web site. PIs from all program areas overwhelmingly supported the construction of a web site to provide more information on evaluation. Some, however, expressed concern that such a site may lead to additional requirements on top of their already overburdened schedules. Almost all of the PIs who advocated the idea of a web site offered suggestions for information, links, and tools that they would likely utilize. Some suggestions, mentioned by numerous PIs in different program areas, were lists of evaluators, links to instruments, and examples of successful proposals, projects, and evaluations. PIs' other suggestions for the web site are as follows:

- Examples of successful proposals and evaluation plans.
- Examples of projects that have completed successful evaluations; exemplars and case studies of PIs who have done outstanding work with their evaluation and how that will affect the next steps at that university or institution; what NSF will do with program planning; and how industry will respond to outcomes.

- Model evaluation schemes and examples of what to collect for different types of projects.

- Lists of appropriate assessment tools/products available that already have undergone reliability testing.

- Examples of instruments (including survey instruments written by other PIs), how to implement them, ideas about how they can be tailored to collect exactly what PIs need, what type of time schedule to expect, and how to interpret results.

- Logistical pieces to help track data, i.e., data field forms, database/data entry forms, and web forms.

- Examples of the good and not so good summative reports.

- How different projects have incorporated findings in their practice.

- Blurbs on successes and pitfalls, unforeseen trouble spots, and strategies taken to relieve them.

- Links to help with statistics such as how to use SPSS and Excel to do statistical analysis, access to a computer system to crunch numbers and run data off of a common system, someone/someplace to run past instruments/questionnaires for feedback before using them, and a place for help in double-checking quantitative data.

- Common goals for each program so that they can compare across the board and get statistical significance.

- List of evaluators (individuals or firms) recognized by NSF and their specific area of interest and expertise and a list of evaluation presenters.

- Tips on dealing with difficult issues such as surveying special populations, losing key personnel such as the PI, sampling, sample sizes, and constraints tailored to specific situations.

- Guidelines on when human subject experiment approval is necessary, in summary form and links to NIH web page.

- When to use certain types of evaluation: benefits to internal vs. external evaluators, when to use quantitative vs. qualitative methods, and general ideas for what types of evaluation have worked well for certain types of projects.

- A forum to ask specific questions as they arise, through both NSF POs and peer support such as a bulletin board, list serve, or chat room.

- A place to share best practices, lessons learned, and what is going on in evaluation in similar projects.

- Better navigation tools for information that is supposedly already posted on NSF's web site (i.e., a list of a PI's own projects).

- Electronic versions of the NSF evaluation handbooks and other materials that they have already developed and published.
- Quick-and-dirty guide to evaluation in layman's terms, including explanations on statistical significance and when null hypothesis or control group is needed.
- Guidelines for the annual report and final report, including the quantity/extent of information they require.
- Electronic evaluation tutorials.

Recommendations for NSF/EHR. PIs were asked if they had suggestions for how NSF could improve the evaluation component of the EHR program. Most offered at least one way that they felt that NSF or EHR could improve. Many made overlapping suggestions about information that should be included on a web site. Some suggestions surrounded the necessity of NSF stressing the importance of evaluation to the science and engineering community and continuing to advocate for the freedom of PIs to employ their own methods. They wanted to see more emphasis on evaluation up front, stressed in the program announcement, and at the awarding of the grant. Other suggestions are listed below.

- Provide more education on evaluation for PIs/ orientation on evaluation for new PIs.
- Make requirements more uniform so PIs don't have to change focus each time they are assigned a new PO.
- Hire more staff because POs are spread thin by being responsible for so many grants.
- Offer clear guidelines for dissemination plans, evaluation plans, annual reports, and final reports.
- Requests for proposals should specify reasonable and achievable goals; they tend to be too general or impossible to meet.
- Offer more space in the proposal for a more specific evaluation plan.
- NSF should give better guidance to PIs on how to conduct evaluation, but not so much that it becomes restrictive.
- NSF should provide more information on evaluation to panelists who review proposals.
- NSF should hold symposium/annual meeting where PIs can get together to discuss assessment and hear presenters on assessment.

- NSF should facilitate networking between grants that are doing similar things by providing some way to look up grants awarded by discipline and by smaller program area.

- Guarantee no penalty for negative evaluation so PIs will be encouraged to be honest in their evaluation.

- Minimize duplication of effort required to submit both electronic and hard copy reports.

- NSF should provide feedback on reports because it is frustrating to submit required data and never hear back.

- Implement a visiting team that can work with PIs from larger grants to help design a blueprint for good evaluation.

- NSF could run in-house evaluations with peer review looking at publications.

D. Implications and Next Steps

There were themes that resurfaced frequently in both sets of conversations. The most striking was the frustration at "reinventing the wheel." Both POs and PIs recognized the wealth of information on evaluation that exists in the field. There is a level of frustration at both ends when new PIs essentially start from scratch because they don't have a place to go to effectively mine the existing knowledge. Program and project staffs feel that grants could be run more efficiently if PIs knew where to go to access resources. Many PIs have improved their evaluation processes through trial and error, but they don't think that everyone should have to. PIs have also found or designed effective evaluation instruments that could aid other PIs if they were made available.

The support for an evaluation web site was overwhelming from both POs and PIs. There were numerous suggestions for how such a web site could facilitate information sharing. The web site should offer or link to evaluation tools such as instruments; samples of successful evaluation plans, proposals, and reports; and ways to share information and tips on lessons learned, problems encountered, and solutions. The site should also make available resources that are already available, such as the *User-Friendly Handbook for Mixed Method Evaluation*.

Though most PIs didn't acknowledge problems finding evaluators, so many of them expressed interest in a list of available evaluators that we can infer that they might seek someone else if they knew where to look. POs constantly referenced the lack of qualified evaluators in the field and

suspect that reality as the reason PIs are dependent on the same evaluators. Some possibilities for identifying and referencing quality evaluators should be explored.

Evaluation training is another topic that warrants attention. POs supported the idea of offering evaluation workshops for new PIs. These could be held at their annual meetings through sessions dedicated to evaluation or a separate meeting devoted solely to evaluation. Many PIs requested similar training and were interested in having evaluation professionals present. We know that this already occurs to some extent, but in some program areas PIs had not even attended annual PI meetings. With the enthusiasm that exists on both sides, these types of meetings have a good chance of providing a positive impact. Efforts should be made to promote evaluation training opportunities and insure that all PIs are made aware of them before they occur.

Finally, staff at all levels have expressed discontent with the lack of standard expectations even within program areas. POs are bothered by the vast difference in the quality and length of reports being submitted, and PIs are equally frustrated with the lack of guidelines. They don't really know what is expected, and they don't feel that they receive adequate feedback on their submissions to guide their subsequent efforts. PIs appreciate the flexibility afforded to them and don't want to lose that, but they do want some kind of minimum standards to follow.

We see these themes as very useful as we move forward in developing our capacity-building activities. And, interim results have already been incorporated into our revised work plan and initial design for an evaluation web site. After feedback from NSF, we proposed sharing this report, along with the initial design for the web site and revised work plan, at the meeting of our advisory board on April 4. We feel that the three documents will provide the basis for a very useful discussion that will lead to the refinement of plans that exist and, perhaps, suggestions for additional capacity-building activities.

Attachment A:
PO Conversation Protocol

Protocol for DD and PO Interviews

Recently there has been increased emphasis on project evaluation across EHR programs and your program announcement makes it clear that evaluation is an expected part of each project.

Generally speaking, to what extent has the emphasis on evaluation affected your projects?

How are the projects responding to this emphasis? Are they taking it seriously? Are their proposals technically sound and do they have the potential for producing information that will be useful?

Do they seem to have any trouble finding the evaluation support they need? If yes, what kind of trouble? If not, where do they tend to go for support?

Do you see any changes in submissions? In the annual reports that are produced? (Ask if interviewee was here before the emphasis was intensified.)

Has the emphasis on evaluation had any impact on the way that projects are reviewed? Has this posed any new challenges for managing panels? To what extent are the panels applying the emphasis?

Do the project evaluations provide you the information you need for responding to the Government Performance and Results Act (GPRA)? If not, where are there gaps?

Has there been an impact on the project's actual practice? Do you see the evaluator as having an active and significant role in the project?

Do you need any additional help in working with evaluation, such as technical assistance to the projects or assistance in their review?

Is there sufficient guidance from NSF to prospective PIs regarding project evaluation in the program announcements and EHR publications on evaluation? If no, what additional guidance would have been useful, and how would it have improved the overall quality of the evaluation?

Do you have any recommendations for NSF as to how it can improve the evaluation component of EHR programs?

In terms of your own needs for information to improve your program or report to on its efficacy to others, is there additional information you would need through a PROGRAM evaluation that you don't feel you will get from the projects' own evaluations?

Attachment B:
PI Conversation Protocols

Completed project evaluation

- What was the main objective of your evaluation? Did you track whether certain activities were carried out? Did you evaluate impact or outcomes?

- Did you conduct the evaluation for your project yourself? If not, did you use an evaluator from your university or organization or did you hire an external evaluator? Did you have any trouble finding an evaluator?

- How much guidance did you provide your evaluator? Did you specify topics, goals and objectives, methodologies, or types of respondents that the evaluator should use or did you leave it up to him/her? Do you feel that you had an adequate background in evaluation in order to guide the evaluator?

- Were there any evaluation components for your project that were uniformly required by NSF at the program level? If so, do you feel that they were clear in what is required?

- How useful did you find the evaluation that was conducted for your project? Did it produce valuable information regarding the achievement of the project's goals and objectives? Did it produce timely and practical and information that would help modify or improve your project?

- How did you use the findings? Did you share findings with others inside or outside of your organization? Were any changes made to the project's practice based on the evaluation findings?

- Do you need any additional help in working with evaluation, such as technical assistance? If yes, in what areas?

- Do you feel there is sufficient guidance from NSF/EHR to PIs regarding project evaluation? If no, what additional guidance would be useful, and how would it improve the overall quality of the evaluation?

- NSF is thinking of developing a web site to provide PIs with information on evaluation. If this were done, what kinds of information, links, or tools would you be most likely to utilize?

- Do you have any other recommendations for NSF as to how it can improve the evaluation component of EHR projects?

In process of conducting project evaluation

- What is the main objective of your evaluation? Do you track whether certain activities are carried out? Do you evaluate impact or outcomes?

- Are you conducting the evaluation for your project yourself? If not, are you using an evaluator from your university or organization or did you hire an external evaluator? Have you had any trouble finding an evaluator?

- How much guidance do you provide your evaluator? Do you specify topics, goals and objectives, methodologies, or types of respondents that the evaluator should use or do you leave it up to him/her? Do you feel that you have an adequate background in evaluation in order to guide the evaluator?

- Are there any evaluation components for your project that are uniformly required by NSF at the program level? If so, do you feel that they are clear in what is required?

- How do you plan to use the findings? Do you anticipate sharing findings with others inside or outside of your organization? Do you intend to make any changes to the project's practice based on the evaluation findings?

- Do you need or anticipate needing any additional help in working with evaluation, such as technical assistance? If yes, in what areas?

- Do you feel there is sufficient guidance from NSF/EHR to PIs regarding project evaluation? If no, what additional guidance would be useful, and how would it improve the overall quality of the evaluation?

- NSF is thinking of developing a web site to provide PIs with information on evaluation. If this were done, what kinds of information, links, or tools would you be most likely to utilize?

- Do you have any other recommendations for NSF as to how it can improve the evaluation component of EHR projects?

Evaluation is planned

- What is the main objective of your evaluation? Do you plan to track whether certain activities are carried out? Do you intend to evaluate impact or outcomes?

- Do you plan to conduct the evaluation for your project yourself? If not, do you plan to use an evaluator from your university or organization or look to an outside source? Do you know where to look for an evaluator?

- How much guidance do you think you will be able to provide your evaluator? Will you specify topics, goals and objectives, methodologies, or types of respondents that the evaluator should use or will you leave it up to him/her? Do you feel that you have an adequate background in evaluation in order to guide the evaluator?

- Are there any evaluation components for your project that are uniformly required by NSF at the program level? If so, do you feel that they are clear in what is required?

- How do you plan to use the findings? Do you anticipate sharing findings with others inside or outside of your organization? Do you intend to make any changes to the project's practice based on the evaluation findings?

- Do you anticipate needing any additional help in working with evaluation, such as technical assistance? If yes, in what areas?

- Do you feel there is sufficient guidance from NSF/EHR to PIs regarding project evaluation? If no, what additional guidance would be useful, and how would it improve the overall quality of the evaluation?

- NSF is thinking of developing a web site to provide PIs with information on evaluation. If this were done, what kinds of information, links, or tools would you be most likely to utilize?

- Do you have any other recommendations for NSF as to how it can improve the evaluation component of EHR projects?

Attachment C:
Sampling Framework

Sample Framework. As determined in discussions between Westat and REC, we decided to limit conversations on project evaluation to four divisions from EHR: Undergraduate Education (DUE), Human Resources Development (HRD), Elementary and Secondary and Informal Education (ESIE), and Graduate Education (DGE). We included only those grants that were awarded in fiscal years 1999, 2000, and 2001. This decision was made for two reasons:

- Any grants that had been awarded in fiscal year 2002 will not have been active long enough to have completed end-of-year evaluation activities, and the information that grantees likely could provide regarding evaluation would be limited.
- PIs for grants that were awarded prior to the 1999 cycle may be hard to locate; they may no longer work on the same projects or may have forgotten detail information about their evaluations.

There were 2,757 grants awarded in during this time frame in DUE, HRD, ESIE, and DGE (Table 1). Some cases were defined as ineligible; others that had been awarded parts of the same grant over several years were included only once. We eliminated grants that had total awards of less than $100,000 since projects with larger budgets will be more likely to have funds allocated for evaluation.

Table 1. All grants awarded in DUE, HRD, ESIE, and DGE in FY 1999-2001

Division	Total grant award			Number of total grants
	<$100,000	$100,000-$1,000,000	>$1,000,000	
HRD[1]	149	78	92	319
DUE[2]	751	795	53	1,599
DGE[3]	235	18	116	369
ESIE[4]	104	166	200	470
TOTAL	1,239	1,057	461	2,757

[1]Grantees in HRD were mostly colleges and universities with some private institutes or organizations.
[2]Grantees in DUE were primarily colleges, universities, and community colleges, but there were also some research institutions.
[3]DGE grantees were usually individuals, colleges, or universities, but that also were some private research organizations.
[4]ESIE grantees were private organizations, museums, school districts, and colleges and universities.

The process resulted in 1,460 unique projects currently funded at least $100,000 in these four program areas. Our sample comprised 5 percent of this group, or 73 projects. We also wanted to get a sense of the difference in evaluation activities taking place between the medium-size and the larger projects. Table 2 displays the eligible grants by division and grant size.

Table 2. Grantees eligible for the sample

Division	Total grant award				Total grants	
	$100,000-$1,000,000		>$1,000,000			
	Percent	Number	Percent	Number	Percent	Number
HRD	7.3	76	15.1	65	9.6	140
DUE	75.4	782	11.8	50	57.0	832
DGE	1.7	18	26.7	113	9.0	131
ESIE	15.5	161	46.3	196	24.5	357
TOTAL	100.0	1,037	100.0	423	100.0	1,460

NOTE: Percents may not add to 100 due to rounding.

We sorted the list of these grants by their size, their EHR division, the type of grantee (i.e., educational institution, museum, or private research institute), and alphabetically by name of the grantee institution within those categories. We then selected every 19th grant in order to reach our 5 percent sample of 73 grantees. By applying this sampling technique, we obtained the distribution shown in Table 3:

Table 3. Selected grantees

Division	Total grant award		Number of grants
	$100,000-$1,000,000	>$1,000,000	
HRD	4	4	8
DUE	39	3	42
DGE	1	5	6
ESIE	8	9	17
TOTAL	52	21	73

In order to get a general feel for evaluation activity within each grant size and division, we needed to talk to several different grantees within each of these groups to determine if there are similarities in their experiences. Since the sorting described above did not yield enough interviews within some of the divisions to ensure that we spoke to all types of grantee organizations, we redistributed some of the largest numbers, which have provided a more than adequate sample within other divisions, to bring our n's closer together. This allowed us to reach most of the types of grantees within each program for each funding level (Table 4).

Table 4. Redistribution of sample grantees

Division	Total grant award		Total
	$100,000-$1,000,000	>$1,000,000	
HRD	8	9	17
DUE	12	8	20
DGE	8	8	16
ESIE	10	10	20
TOTAL	38	35	73

Within this sample, we were sure to select grantees from colleges and universities as well as some from research institutions. We also incorporated suggestions from program officers for projects to talk to regarding evaluation activities.